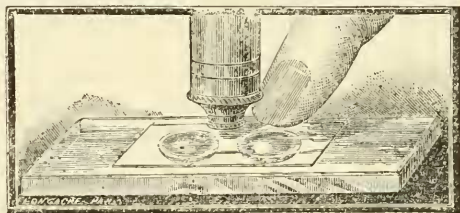


D. S. HOLMAN'S DEVICE FOR THE MICROSCOPIC EXAMINATION OF FLUIDS.

By W. COLEMAN SELLERS.

(Read before the American Philosophical Society, March 21, 1873.)

In a slip of plate glass 1" wide, 3" long, $\frac{1}{8}$ in. thick, two circular concave cells are ground, there being a space of $\frac{1}{12}$ in. left between the cells. These cells, which are about $\frac{1}{2}$ in. in diameter and as deep as the glass will permit—say $\frac{1}{16}$ in. deep—are united by a very shallow channel somewhat below the centre of the two cells, so that with cells placed $\frac{1}{12}$ in. apart, the channel is about $\frac{3}{12}$ in. long. Both the cells and channel are polished. If a few drops of blood be placed in these cells, and a cover of thin glass be pressed down, some of the blood, finding its way between the surfaces in contact, will dry, and act as a cement to hold the fluid blood in the cells in place. The quantity of blood being insufficient to fill the cells, a considerable amount of air becomes imprisoned with the blood, and the expansion of the air in either cell will drive the blood through the channel into the adjacent cell, and in the shallow channel it is presented under the most favorable condition for examination. By holding the top



of the finger near one or the other cell, the heat is enough to cause the expansion and a consequent more or less rapid flow of the fluid through the channel. This flow may be arrested or continued and reversed at will by change of position of the finger, so that any particles floating in in the fluid can pass in succession across the field, but can be arrested and examined with ease at will.

Blood or other fluid inclosed in the cells remains in good condition for examination for several days, and changes undergoing in the fluid can be examined.

Mr. Holman exhibited the slide containing human blood, and showed the white corpuscles like the amebæ found in water, and called attention to the change in form of these minute bodies, similar in every way to the amœboid action noticed in the forms found in water, *i. e.*, a change of form, jutting out projections of its body, and consequent entire change of form of the entire body, and by such change, a kind of slow locomotion. Within these amœba-like forms were plainly seen certain minute specks, which had a motion among themselves similar to the so-called molecular motion. Mr. Holman thought it barely possible that these

so-called white corpuscles may be in reality veritable amebæ, living in the blood. He stated that the power used was a $\frac{1}{10}$ immersion objective, and with the eye-piece used gave 500 diameters, field being $\frac{1}{100}$ of an inch in diameter, was enlarged to five inches, and in this field he had seen as many as ten of these amœboid forms at the same time. Joseph G. Richardson, M.D., in his handbook of Medical Microscopy, p. 177, says: "One of the most remarkable properties of the white blood globules is their power of amœboid motion, a movement so named because it precisely resembles that of the Amœba, a genus of Infusoria." Then follows a description of the Amœba, taken from the Micrographic Dictionary. Mr. Holman's slide may serve a good purpose in the examination of these curious forms in blood, as it is also convenient in the examination of any fluids containing minute forms.

Stated Meeting, April 4th, 1873.

Present, 28 members.

Vice President, MR. FRALEY, in the Chair.

Dr. La Roche and Mr. Henry Pemberton, new members, were introduced to the presiding officer and took their seats.

A letter accepting his appointment to prepare an obituary notice of the late Dr. Hugh L. Hodge was received from Dr. Penrose, dated 1331 Spruce street, March 29th, 1873.

A letter of envoy was received from Prof. J. D. Whitney, dated Cambridge, Mass., March 31st, 1873.

Donations for the Library were received from the Hon. George Bancroft, of Berlin; the Rotterdam S. of Ex. Science; the Bureau des Longitudes, Geographical Society and Revue Politique; the Belgian Academy; the Royal Astronomical Society and London Nature; the Geological Survey of Canada and Montreal Natural History Society; the New Bedford Free Public Library; the American Journal of Science and Prof. O. C. Marsh, of New Haven; the Philadelphia Academy of Natural Sciences, Franklin Institute, College of Pharmacy, Journal of Pharmacy, Penn